Arthritis Fact Sheet

CIRM funds several research projects investigating ways to repair cartilage damage that can lead to osteoarthritis as well as repair the damage from osteoarthritis after it occurs.

Description

According to the Arthritis Foundation, more than 50 million Americans have some form of arthritis. More than 30 million of these people have osteoarthritis (OA), the most common form of arthritis that specifically causes the breakdown of cartilage tissue in the joints. It does not just strike the elderly; 14 percent of people over 25 have the degenerative joint disease. That rises to 33 percent for those over 65 with the end stage disease resulting in a million joint replacement surgeries each year. In a more rare condition, young people have cartilage damage caused by underlying bone defects that if left untreated are a major cause of early-onset osteoarthritis.

CIRM is funding several approaches aiming to stop or reverse OA. One team found a drug that recruits mesenchymal stem cells naturally found in our joints to the site of injury where they develop into new cartilage tissue (see clinical program below). Other groups are looking for ways to generate new cartilage from stem cells grown in the lab along with various forms of scaffold to help give the cells the desired shape and structure. Teams are using both adult stem cells and embryonic stem cells as a starting point for creating the cartilage.

Clinical Stage Programs

California Institute for Biomedical Research

Researchers at the California Institute for Biomedical Research (CALIBR) have been awarded $8.447 million to test KA34, a drug that, in preclinical tests, recruits stem cells to create new cartilage in areas damaged by osteoarthritis. CIRM funded the research that developed this technology and now this Phase 1 trial will test this stem cell directed treatment in people with osteoarthritis of the knee, hopefully slowing down or even halting the progression of the disease.

- Learn more about this program
- Learn more about this clinical trial

CIRM Grants Targeting Arthritis

Researcher name	Institution	Grant Title	Grant Type	Approved funds
Peter Schultz	Scripps Research Institute	Cartilage Regeneration by the Chondrogenic Small Molecule PRO1 during Osteoarthritis	Early Translational II	$6,047,249
Darryl D'Lima	Scripps Health	Stem Cell-Based Therapy for Cartilage Regeneration and Osteoarthritis	Early Translational I	$3,118,431
Dan Gazit	Cedars-Sinai Medical Center	Gene Targeting to Endogenous Stem Cells for Segmental Bone Fracture Healing	Early Translational IV	$5,180,674
Denis Evseenko	University of California, Los Angeles	Promoting survival and countering hypertrophy of pluripotent stem cell (PSC)-derived chondrocytes	Basic Biology V	$411,330

Leonardo Sahelijo	California Institute for Biomedical Research	Evaluation of the Safety and Tolerability of KA34 in a Phase 1, Double-Blind, Dose Escalation Trial in Patients with Knee Osteoarthritis	Clinical Trial Stage Projects	$8,447,523	
Denis Evseenko	University of California, Los Angeles	Promoting survival and countering hypertrophy of pluripotent stem cell (PSC)-derived chondrocytes	Basic Biology V	$735,138	
Jack Wang	Cellular Biomedicine Group, Inc.	Allogenic human adipose-derived mesenchymal stem cells for the treatment of knee osteoarthritis	Late Stage Preclinical Projects	$2,291,976	
Leonardo Sahelijo	California Institute for Biomedical Research	Evaluation of the Safety and Tolerability of KA34 in a Phase 1, Double-Blind, Dose Escalation Trial in Patients with Knee Osteoarthritis	Clinical Trial Stage Projects	$8,447,523	
					Total: $34,679,844.00

CIRM Arthritis Videos

Stefano Da Sacco, CHLA - CIRM Stem Cell #SciencePitch

Sargis Sedrakyan, CHLA - CIRM Stem Cell #SciencePitch

Andrew McMahon, USC - CIRM Stem Cell #SciencePitch

News and Information

- CIRM Stem Cellar blogs on arthritis
- Stories of Hope: Arthritis

Resources

- CDC: Osteoarthritis fact sheet
- Arthritis Foundation: Osteoarthritis
- NIH: Arthritis fact sheet
- Arthritis Resources from Flexable Health

Find Out More:
Stem Cell FAQ | Stem Cell Videos | What We Fund

Source URL: https://www.cirm.ca.gov/our-progress/arthritis-fact-sheet